

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MARYLAND**

UNITED STATES OF AMERICA)	
)	
v.)	CASE NO.: 8:24-CR-211-TDC
)	
HOAU-YAN WANG,)	
)	
Defendant.)	

**DEFENDANT’S MOTION IN LIMINE TO EXCLUDE EXPERT TESTIMONY OF
PAUL BROOKES, Ph.D.**

Jennifer L. Beidel (*Pro Hac Vice*)
Mark Chutkow (*Pro Hac Vice*)
Timothy Caprez (*Pro Hac Vice*)
Emma Blackwood (*Pro Hac Vice*)
DYKEMA GOSSETT
PLLC 39577 Woodward Avenue
Suite 300
Bloomfield Hills, MI 48304
(248) 203-0700
jbeidel@dykema.com
mchutkow@dykema.com
tcaprez@dykema.com
eblackwood@dykema.com

Joanne Zimolzak (19342)
DYKEMA GOSSETT
PLLC 1301 K Street NW
Suite 1100 West
Washington, D.C. 20005
(202) 906-8600
jzimolzak@dykema.com

Counsel for Dr. Hoau-Yan Wang

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Defendant Dr. Hoau-Yan Wang (“Dr. Wang”) moves this Honorable Court to exclude the testimony of the Government’s expert witness, Paul Brookes, Ph.D. (“Dr. Brookes”), under Federal Rule of Evidence 702. First, while Dr. Brookes may be an expert in his field of scientific study (metabolism during heart attacks), he is not qualified to render an opinion in the unrelated field of image manipulation for which he is proffered by the Government. Second, Dr. Brookes’ testimony fails to satisfy the *Daubert* standard for admissibility of scientific testimony because it is not supported by appropriate validation. Third, Dr. Brookes’ testimony would not assist the trier of fact but would instead usurp its role. For these reasons, Dr. Brookes’ testimony should be excluded.

I. Facts

A. Dr. Wang’s Research

Dr. Wang is a neuroscientist, educated in the field of pharmacology and recently retired from a position as a tenured medical professor of physiology, pharmacology, and neuroscience. (Doc. 1 ¶ 1; Ex. 1 at 1). Beginning nearly two decades ago, Dr. Wang became an “advisor and consultant” for Cassava Sciences, Inc., f/k/a Pain Therapeutics, Inc. (“Cassava”), a publicly traded biopharmaceutical company, whose work focused on the development of an Alzheimer’s drug. (Doc. 1 ¶¶ 2-3; Ex. 1 at 15).

From 2005 to 2023, during his employment at the City University of New York (“CUNY”), Dr. Wang conducted drug research for Cassava using several laboratory techniques, including a protein detection technique called Western blotting, on animal and human postmortem brain tissues and human body fluids. (Doc. 1 ¶ 9). Western blotting is a largely visual laboratory technique that allows a trained scientist to detect a specific protein by developing and analyzing a visible “band” on x-ray film. (*Id.*). Separate from the visual image of a Western blot “band,” the test’s results can be quantified using a process called densitometry, which compares the darkness and thickness of various bands to determine the relative protein amounts in each sample. (*Id.*). The

Government's indictment accuses Dr. Wang of manipulating images of certain of his Western blots connected to his work with Cassava on behalf of CUNY. (*See, e.g., id.* ¶ 14.c (accusing Dr. Wang of "manipulating data and images of Western blots"))).

B. Dr. Brookes' Professional Qualifications

In support of its Western blot image manipulation theory, the Government offers the expert testimony of Dr. Brookes, who studied biochemistry in his undergraduate and Ph.D. programs. (Ex. 2 at 1). Throughout his career, Dr. Brookes has been a professor of pathology and anesthesiology. (*Id.*). Dr. Brookes' "30+ years in bioscience research has focused on mitochondria and metabolism," and he currently studies metabolism in heart attacks. (*Id.* at 2). His 40-page curriculum vitae contains no mention of him performing drug research for a private company associated with his University or having experience in human brain tissue research, neuroscience, or human trials, all of which is what Dr. Wang did here. (*Id.*). Dr. Brookes has apparently never been qualified as an expert witness in Western blot usage, forensic image analysis, or any other field.

C. Dr. Brookes' Side Project of "Scientific Sleuthing"

Separately from his work as a biochemist, Dr. Brookes has an "interest in research integrity," which led him to launch an anonymous blog called science-fraud.org. (*Id.*). Dr. Brookes ran the site under the "pseudonym *fraudster*, and frequently used foul language and snarky humor" to discuss his claims of research misconduct. Paul S. Brookes, *PSBLAB Cardiac Mitochondrial Research in the Lab of Paul S. Brookes, PhD*, PSBLAB, https://psblab.org/?page_id=778 (last visited Aug. 20, 2025) (emphasis in original). He took down the blog at the instruction of his employer after being sued many times. (*Id.*). Dr. Brookes claims that in his "*day job* as a scientist," he rejects "fully 50% of the manuscripts [he] receive[s] to review because they contain manipulated data or other signs of misconduct." (*Id.*). (emphasis in original). He recognizes that

the way “many journals and institutions handle” allegations of “misconduct is still a complete mess.” (*Id.*).

In April 2014, Dr. Brookes published a paper, without any co-authors, on the impact of publicizing data issues in bioscience. Paul S. Brookes, *Internet publicity of data problems in the bioscience literature correlates with enhanced corrective action*, 2 PEERJ e313, <https://peerj.com/articles/313/> (Apr. 3, 2014). In that paper, Dr. Brookes emphasizes that he drafted the paper “as a private citizen” and “outside of university institutional review board (IRB) oversight.” (*Id.*); see Elisabeth Pain, *Paul Brookes: Surviving as an Outed Whistleblower*, SCIENCE (Mar. 10, 2014), <https://www.science.org/content/article/paul-brookes-surviving-outed-whistleblower> (“It was made clear that my actions were outside my role as a university faculty member.”). In the paper, Dr. Brookes recognizes that “methods for dealing with problematic data are still evolving.” Brookes, *Internet publicity*, 2 PEERJ e313. Dr. Brookes also cites the “U.S. Office of Research Integrity’s 6-year statute-of-limitations on investigating allegations of misconduct,” stating that it often leads to “insufficient evidence in the form of backup data to prove/disprove any allegations.” (*Id.*). While Dr. Brookes claims that several papers have been retracted as a result of his work, he does not claim that any of his work has led to successful civil lawsuits or criminal prosecutions against any of the involved scientists. (Ex. 3).

In a second paper published in 2025, Dr. Brookes refers to himself as a “scientific sleuth.” Paul S. Brookes, *Misconduct Detection — Evolving Methods; Lessons from 15 Years of Scientific Image Sleuthing*, 53 J.L. MED. & ETHICS 11 (2025).¹ In the paper, Dr. Brookes mentions many

¹Available at <https://www.cambridge.org/core/journals/journal-of-law-medicine-and-ethics/article/misconduct-detection-evolving-methods-lessons-from-15-years-of-scientific-image-sleuthing/B10AC2793CC5DA6DE8A37E6893CB55A4#article> (last visited Aug. 20, 2025).

potential tools that *may* be used in image analysis, but he does not describe a generally accepted methodology that *must* be used in such analysis. (*Id.*).

D. Dr. Brookes' Methodology for Analyzing Dr. Wang's Research

Dr. Brookes analyzed sets of Dr. Wang's Western blot images provided by the Government using a "standard" that he calls an "analytical pipeline for western blot images." (Ex. 4 at 15-16).² The supposed standard involves applying a "3-stage pipeline" of "reverse analysis," "forward analysis," and "further anomalies and notable features" to the images. (*Id.*). Dr. Brookes also lists eight supposed "standard forensic analytical methods" that can be used during the "3-stage pipeline," but does not include any discussion of generally accepted practices on choosing forensic analytical method(s) for a particular situation. (*Id.* at 12-14). While Dr. Brookes also supplies a document describing purported standards for the *performance* of Western blotting research, his expert opinions concern analysis of Western blot images, not performance of the research that led to those Western blots. (*Id.* at 1-11).

Dr. Brookes' standard pipeline and analytical methods are not derived from any source – he appears to have created them out of whole cloth. (*Id.* at 12-14). Nor does Dr. Brookes describe a methodology for selecting which images to analyze out of Dr. Wang's tens of thousands of Western blot images or for determining that he is analyzing complete and correct sets of images for each of Dr. Wang's experiments. (*Id.*). In fact, Brookes admits that it "cannot be ruled out that

² Exhibit 4 is what appears to be the analytical method portion of the Government's voluminous production associated with Dr. Brookes, which is too large to attach as an exhibit to this filing. It is unclear exactly which document(s) the Government intend to comprise Dr. Brookes' report. In addition to the numbered documents 1 to 3 contained in Exhibit 4, there are numbered documents ranging from 4.1 to 6.6 and several unnumbered documents that appear similar to the numbered documents. The Government offers no explanation of or organization for the various unnumbered documents. Should the Court wish to view any or all of the Government's production associated with Dr. Brookes, undersigned counsel can supply those materials.

other” relevant images may exist and that Dr. Wang’s naming convention sometimes suggests that certain files are, in fact, missing. (Ex. 6 at 5).

II. Legal Standard

Federal Rule of Evidence 702 provides that a witness who is qualified as an expert by “knowledge, skill, experience, training, or education” can provide testimony only if (1) the expert’s “scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or determine a fact in issue”; (2) “the testimony is based on sufficient facts or data”; (3) “the testimony is the product of reliable principles and methods”; and (4) “the expert’s opinion reflects a reliable application of the principles and methods to the facts of the case.” Fed. R. Evid. 702. Reliability “is an assessment of whether the expert’s reasoning or methodology is valid and warrants the relaxation of the common law first-hand knowledge requirement for witnesses.” *United States v. Lewis*, 220 F. Supp. 2d 548, 552 (W.D. Va. 2002).

A court must ensure that all scientific, technical, and other specialized “testimony or evidence admitted is not only relevant, but reliable.” *Daubert v. Merrell Dow Pharma., Inc.*, 509 U.S. 579, 589 (1993); *see also Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999) (“*Daubert*’s general holding – setting forth the trial judge’s general ‘gatekeeping’ obligation – applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized knowledge.’”). A two-part test determines whether scientific, technical, or other specialized testimony is properly admissible: (1) the expert testimony must consist of “scientific knowledge” that is “supported by appropriate validation;” *and* (2) the evidence or testimony must “assist the trier of fact to understand the evidence or to determine a fact in issue.” *Daubert*, 509 U.S. at 591 (emphasis in original); *see also United States v. Dorsey*, 45 F.3d 809, 813 (4th Cir. 1995). Several factors inform whether the “scientific knowledge” prong

of the two-part test has been met: (1) whether the theory or technique “can be (and has been) tested;” (2) “whether the theory or technique has been subjected to peer review and publication;” (3) “the known or potential rate of error” of the method used and “the existence and maintenance of standards controlling the technique’s operation;” and (4) the degree of the method’s acceptance within the “relevant scientific community.” *Daubert*, 509 U.S. at 593-94; *Dorsey*, 45 F.3d at 813; *see also United States v. Bynum*, 3 F.3d 769, 773 (4th Cir. 1993) (“Trial judges may consider whether the particular opinion or technique has been subjected to peer review, what the known rate of error of the technique is, and . . . whether it enjoys ‘widespread acceptance’ in the community.”).

III. Argument

Dr. Brookes’ proffered testimony should be precluded for three reasons: (A) the testimony is outside his field of scientific expertise, which is biochemistry and the study of metabolism in heart attacks; (B) Dr. Brookes fails to offer a scientific methodology for his theory that is appropriately validated, such that the Court can ensure its reliability; and (C) the testimony would not assist the jury, but would instead usurp its role. Each reason for exclusion is set forth below.

A. Dr. Brookes is not qualified as an expert in the field of image comparison.

Dr. Brookes is a biochemist whose “*day job* as a scientist” is focused on studying metabolism during heart attacks. Brookes, *PSBLAB Cardiac Mitochondrial Research* (emphasis in original). While Dr. Brookes also considers himself a “scientific sleuth” who writes about research integrity issues online, he admits that his sleuthing is “conducted outside the boundaries of his” job and “as a private citizen,” sometimes even using unprofessional techniques, like “foul language and snarky humor.” *Id.*; Brookes, *Internet publicity*, 2 PEERJ e313 at n.1; Brookes, *Misconduct Detection*, 53 J.L. MED. & ETHICS 11. In other words, Dr. Brookes’ training, education, and work as a biochemist do not qualify him as an expert on scientific sleuthing theories of the

type he is applying in this case or on Dr. Wang's specialized field of neuroscience and human brain tissue and body fluid research done under contract for a private company.

Dr. Brookes will likely point to his experience blogging and tweeting about research misconduct issues as a basis for his expertise. While an expert witness may be qualified on the basis of experience, the expert must still be able to "explain how [his] experience leads to the conclusion reached, why [his] experience is a sufficient basis for the opinion, and how [his] experience is reliably applied to the facts." *United States v. Wilson*, 484 F.3d 267, 274-75 (4th Cir. 2007). Here, the Government does not satisfy that standard with respect to Dr. Brookes' testimony, because the Government offers nothing from which to determine the reliability of Dr. Brookes' work on Dr. Wang's case. Nor does the Government offer any analogous cases in which similar testimony has been offered or admitted or anything else to suggest that Dr. Brookes' experience gives him a sufficient basis to form the opinions reached. Dr. Brookes' testimony should be excluded because he is not qualified to render the testimony for which he is offered.

B. Dr. Brookes' theory is not supported by appropriate validation.

To offer scientific testimony, an expert witness must advance a theory that is supported by appropriate validation, including testing, peer review, and acceptable error rates, and based on a standard that is generally accepted in the scientific community. *United States v. Crisp*, 324 F.3d 261, 266 (4th Cir. 2003). Dr. Brookes appears to have created his methodology for this matter out of whole cloth, so it satisfies none of the factors needed for appropriate validation.

1. *Dr. Brookes' theory is not derived from a standard that controls its operation.*

Dr. Brookes' self-created "standard" for "analytical pipeline for western blot images" essentially compares images to see if they are the same or different. The United States Court of Appeals for the Fourth Circuit affirmed the exclusion of expert testimony in similar circumstances

in *Dorsey*. There, two forensic anthropologists were offered to provide expert testimony that the defendant was not the individual depicted in surveillance photographs. *Dorsey*, 45 F.3d at 811-12. The purported experts' methodology compared the surveillance photographs to recent photographs of both the defendant and boots that had been seized from his home. *Id.* In excluding the testimony, the district court said: "I am not so sure this is a recognized science such as a forensic chemist, or forensic scientist who does fingerprints, who does chemical analyses, who does handwriting, they are recognized. I think . . . what we are doing here is comparing . . . some photographs." *Id.* at 812. The court went on to conclude that the experts were really being asked to "tell the jury" whether to believe the witnesses in the case who had "already made their identification of the same evidence." *Id.* While the experts said they were reaching their conclusions "with a reasonable degree of scientific certainty," the court concluded that was insufficient to permit the expert to usurp the jury's role. *Id.* In affirming the district court's conclusions, the Fourth Circuit found that the purported expert testimony did not satisfy the *Daubert*'s scientific knowledge prong and noted that similar testimony had only been offered twice in previous cases. *Id.* at 814-15.

Likewise, in two cases involving automotive parts failures, the Fourth Circuit and the United States Supreme Court have excluded expert witnesses who had seemingly relevant qualifications because of concerns with their methodologies. In both cases, the experts created their own methodologies, largely based on their own personal industry experiences and theories, and unsupported by either objective evidence, like test data or calculations, or citations to relevant literature in the field or other experts who use the same methodologies. *See Kumho*, 526 U.S. at 141, 143-44, 146, 157 (1999); *Oglesby v. GMC*, 190 3d 244, 247-48 (4th Cir. 1999); *see also Alevromagiros v. Hechinger Co.*, 993 F.2d 417, 422 (4th Cir. 1993) (excluding opinions "unsupported by any evidence such as test data or relevant literature in the field"). Of course, in

both cases, the experts themselves claimed that their methods were accurate, but the Courts held that “nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.” *Kumho*, 526 U.S. at 157.

Finally, a court in the Fourth Circuit declined to rely on the proffered expert testimony of a handwriting expert because the expert “failed to offer any substantive explanation of the standards used in the field.” *Lewis*, 220 F. Supp. 2d at 554. Instead, the expert simply pronounced standards, such as that twenty-five samples of writing were generally required for handwriting analysis, without explanation or citation as to why twenty-five was the correct number. *Id.*

Here, while Dr. Brookes provided the Government with a “standard” that he calls an “analytical pipeline for western blot images,” Dr. Brookes cites no authority for this “3-stage pipeline” approach to image analysis, his method of selecting the appropriate images for comparison in the first place, or the eight supposed image analysis tools that accompany his pipeline approach. (Ex. 4 at 12-16). In fact, like the excluded automotive experts in *Kumho* and *Oglesby*, Dr. Brookes appears to have created his standards and theories himself, and he has not supported those standards or theories with test data. *Kumho*, 526 U.S. at 141, 143-44, 146, 157; *Oglesby*, 190 3d at 247-48. And, like the handwriting expert in *Lewis*, who claimed without support that twenty-five images were required for handwriting analysis, Dr. Brookes simply claims without support that his 3-stage process applies to image analysis. *Lewis*, 220 F. Supp. 2d at 554. Of course, that Dr. Brookes himself believes the standards he applies are appropriate is of no moment because

courts are not required to admit expert testimony based on the expert's own unproven pronouncements. *Kumho*, 526 U.S. at 157.

Dr. Brookes' self-created standards notably do not involve computer forensic or metadata analysis of the images involved to ensure that he is, in fact, analyzing the correct set of images. (Ex. 4). Instead of performing such forensic analysis, Dr. Brookes has essentially created his own unsupported method for comparing one image with another, which the *Dorsey* court found impermissible. *Dorsey*, 45 F.3d at 812. And while Dr. Brookes recognizes that investigating image manipulation is often complicated by the fact that much of the backup data is lost as the years pass, his method appears not to consider that limitation here because he analyzed work of Dr. Wang's that is decades old. Brookes, *Internet publicity*, 2 PEERJ e313. What's more, Brookes admits that he cannot rule out that certain of Dr. Wang's relevant images may be missing, but he persists in his analysis, nonetheless. (Ex. 5 at 5).

Tellingly, Dr. Brookes' writings on image manipulation outside of this case are much less definitive as to the "standard" for image analysis than are his proffered expert reports here. When writing about his image analysis process outside of the context of this case, Dr. Brookes recognizes that "methods for dealing with problematic data are still evolving" and that there are methods that "may" be used for such analyses but not any accepted method that "must" be used. Brookes, *Internet publicity*, 2 PEERJ e313; Brookes, *Misconduct Detection*, 53 J.L. MED. & ETHICS 11. Dr. Brookes does not offer an acceptable standard for his work, which weights against his admission as an expert witness.

2. *Dr. Brookes' theory has not been tested.*

Scientific knowledge "is generated through the scientific method – subjecting testable hypotheses to the crucible of experiment in an effort to disprove them. An opinion that defies testing, however defensible or deeply held, is not scientific." *Bynum*, 3 F.3d at 773. Courts in the

Fourth Circuit have excluded expert testimony where “reliable testing and error rate” analysis could have been, but was not, conducted. *Lewis*, 220 F. Supp. 2d at 553 (involving expert handwriting analysis). This is because allowing the admission of “ultimately unproven analysis” may unwittingly perpetuate and legitimate junk science.” *Id.* at 554; *see also United States v. Bonner*, 648 F.3d 209, 215 (4th Cir. 2011) (“[A]s gatekeepers of expert testimony, courts must be careful to avoid the potential pitfalls of junk science.”).

Here, Dr. Brookes offers scientific testimony using a “3-stage pipeline” that he appears to have created for this matter. But Dr. Brookes offers no evidence that anyone else has ever tested his theory, applied it to other of Dr. Wang’s research, or otherwise determined its validity. Admitting Dr. Brookes’ untested and unproven analysis could unwittingly perpetuate junk science. The lack of testing of Dr. Brookes’ work weighs against its admissibility.

3. *Dr. Brookes’ theory has been subjected to limited peer review.*

Peer review in the scientific community is a process by which experts in a field evaluate the quality of a scholarly work, typically an article submitted for publication in a journal, to ensure it meets the standards of the field. *See, e.g., United States v. Graham*, No. 4:23-cr-00006, 2024 U.S. Dist. LEXIS 28646, at *17-18 (W.D. Va. Feb. 20, 2024) (discussing “meaningful peer review” involving independent, double-blind processes employed by reputable journals). There is, of course, no peer review process for blogs, Twitter posts, or Dr. Brookes’ posts to his own website.

While Dr. Brookes has published two papers on his scientific sleuthing in nearly fifteen years, Dr. Brookes “emphasize[d]” that his research for those papers “was conducted outside the boundaries of his” job and “as a private citizen” “outside of university institutional review board (IRB) oversight.” Brookes, *Internet publicity*, 2 PEERJ e313 at n.1; Brookes, *Misconduct Detection*, 53 J.L. MED. & ETHICS 11. Dr. Brookes has no co-authors on either paper, so other contributors cannot be considered a source of peer review. Brookes, *Internet publicity*, 2 PEERJ e313; Brookes,

Misconduct Detection, 53 J.L. MED. & ETHICS 11. Moreover, the first of Dr. Brookes’ two papers concerns the impact of publicizing data issues on corrective actions – not the methodology for finding those data issues in the first place. Brookes, *Internet publicity*, 2 PEERJ e313. The second paper was published in an open-source publication just five months ago, years *after* Dr. Brookes formulated his opinions in this case and appears only to have been cited in about a dozen social media posts and no peer-reviewed journals. Brookes, *Misconduct Detection*, 53 J.L. MED. & ETHICS 11. Open-source review is not meaningful “peer review” because anyone can comment on any article, regardless of whether they are really a “peer” in the scientific community, and no independent, double-blind processes are employed. *Graham*, 2024 U.S. Dist. LEXIS 28646, at *17-18. Dr. Brookes’ scientific sleuthing project has not been sufficiently peer reviewed to warrant its admission as expert testimony in a criminal case.

4. *Dr. Brookes’ theory has a high potential error rate.*

Dr. Brookes offers no method for determining the error rate of his work. But he does claim that in his “*day job* as a scientist,” he rejects “fully 50% of the manuscripts [he] receive[s] to review because they contain manipulated data or other signs of misconduct.” Brookes, *PSBLAB Cardiac Mitochondrial Research* (emphasis in original). This high rejection rate suggests that Dr. Brookes’ theory is yielding erroneous results because it would find that fully half of all scientific manuscripts are fraudulent. The fallout from application of Dr. Brookes’ overbroad approach to the scientific community is potentially devastating.

Dr. Brookes himself recognizes the lack of certainty inherent in his expert opinions. By way of example, in section 4.3 of his expert report, Dr. Brookes twice says that the images he is evaluated “appear[] to contain” a particular image. (Ex. 5). He concludes that it “appears” that one of those images was brightened. (*Id.*). He offers “[s]everal potential explanations” for the appearance of certain aspects of the Western blots. (*Id.*). He finds that other features of those blots

“suggest[]” manipulation. (*Id.*). And in the end, he concludes that the presented blots “do not appear to accurately represent the research record.” (*Id.*). Dr. Brookes’ own lack of reasonable scientific certainty about his opinions suggests a high potential rate of error and weigh against admission of his expert opinions.

5. *Dr. Brookes’ theory has not been generally accepted in the relevant scientific community.*

Dr. Brookes does not appear to argue that his methods have been generally accepted in the relevant scientific community. Quite to the contrary, Dr. Brookes’ anonymous blog work subjected him to lawsuits from other scientists and caused his University employer to instruct him to remove the blog. Dr. Brookes further recognizes that the way “many journals and institutions handle” allegations of “misconduct is still a complete mess,” apparently because they are not applying a generally accepted standard for such work. Brookes, *PSBLAB Cardiac Mitochondrial Research*. Other than the two papers that he authored, without any co-authors, Dr. Brookes does not cite or refer to any other papers accepting his methodology. *See Bynum*, 3 F.3d at 773 (discussing the proffering party’s establishment of indicia of reliability for scientific testimony, like “list[ing] the numerous publications through which the technique had been subjected to peer review, and conclud[ing] with a citation to authority that [the technique] enjoys general acceptance in the field.”).

Nor does Dr. Brookes claim that any of his sleuthing work has led to successful civil lawsuits or criminal prosecutions against any of the involved scientists. (Ex. 3). And there does not appear to be any caselaw discussing testimony of the nature proffered by Dr. Brookes, i.e., a non-forensic analytical pipeline for Western blot images.

Dr. Brookes’ methodology has far from general acceptance in the scientific community. Instead, Dr. Brookes and a few other internet sleuths are still attempting to advance the theory that

he applies here via various open source and public forums. When a methodology is essentially composed of a series of untested assumptions that do not appear in the peer-reviewed literature, it has not been sufficiently accepted in the scientific community to permit expert testimony on the topic, particularly in a criminal case such as this one. *See, e.g., Bonner*, 648 F.3d at 215 (4th Cir. 2011) (A “jury could draw a number of apparently plausible, but analytically flimsy conclusions that border on pseudo-science from the expert evidence presented by the government. However, not every articulable inference is proper because scientific rigor demands more than a theory of plausible deductions strung together.”); *see also Oglesby*, 190 3d at 250-51 (4th Cir. 1999) (excluding expert testimony that did not “go beyond mere speculation or conjecture,” “could not eliminate other equally plausible causes,” and was supported by “none of the necessary data”). Dr. Brookes’ theories should not be admitted because they have not gone beyond pseudo- or junk science into the realm of general acceptance.

* * *

In conclusion as to the first *Daubert* prong, Dr. Brookes’ testimony should be excluded because the Government cannot show that it was appropriately validated via testing, peer review, error rate analysis or general acceptance in the scientific community.

C. Dr. Brookes’ testimony would not assist and would usurp the role of the jury.

With respect to the second *Daubert* prong of helpfulness to the trier of fact, courts should consider that expert testimony “can be both powerful and quite misleading because of the difficulty of evaluating it.” *Daubert*, 509 U.S. at 595. As a result, Federal Rule of Evidence 403’s weighing of “possible prejudice against probative force . . . exercises more control over experts than over lay witnesses.” *Id.* And where, as here, the Government’s case is centered around scientific expert testimony, courts must be “particularly vigilant” in acting as the gatekeeper of such evidence.

Bonner, 648 F.3d at 215 (citing *Melendez-Diaz v. Massachusetts*, 557 U.S. 305, 320-21 (2009) (noting the “wide variability across forensic science disciplines with regard to techniques, methodologies, reliability, types and numbers of potential errors, research, general acceptability, and published material”)). As a result, courts may fairly exclude expert testimony on subject matter about which jurors could use their own common sense and observational faculties. *See Dorsey*, 45 F.3d at 814 (citing *United States v. Harris*, 995 F.2d 532, 535 (4th Cir. 1993)). In *Dorsey*, the Fourth Circuit concluded that there was “no indication that the expert testimony [regarding image comparison] was at all necessary” because the “comparison of photographs is something that can sufficiently be done by the jury without help from an expert.” *Id.* at 815. The Fourth Circuit found that “expert testimony can be properly excluded if it is introduced merely to cast doubt on the credibility of other eyewitnesses, since the evaluation of a witness’s credibility is a determination usually within the jury’s exclusive purview” or where it “may in fact usurp the jury’s role.” *Id.*

Here, Dr. Brookes is offered to compare a set of images for the purpose of casting doubt on the credibility of any lay witnesses who testify differently. As in *Dorsey*, jurors can use their own common sense and observation skills to compare the two images. *See, e.g., id.* (“[T]he comparison of photographs is something that can sufficiently be done by the jury without help from an expert.”). Dr. Brookes’ expert testimony is far more prejudicial than probative because jurors may be persuaded to disregard their own observations about the images and the testimony of any eyewitnesses on the subject. Perhaps that is why neither Dr. Brookes nor anyone else appears to have ever testified as an expert on this or any similar method of image analysis. What’s more, Dr. Brookes’ testimony is impermissibly offered on an ultimate question at issue in the case – did Dr. Wang manipulate the Western blot research he was performing for Cassava? Especially in a criminal case, where liberty is on the line, such prejudicial testimony should be excluded.

IV. Conclusion

For the reasons set forth above, the Court should grant Defendant's motion in limine to exclude the expert testimony of Dr. Brookes because he is not qualified to offer the opinion, his theories are not appropriately validated, and his testimony would usurp the role of the jury.

Dated: August 21, 2025

Respectfully submitted,

/s/ Jennifer L. Beidel

Jennifer L. Beidel (*Pro Hac Vice*)

Mark Chutkow (*Pro Hac Vice*)

Timothy Caprez (*Pro Hac Vice*)

Emma Blackwood (*Pro Hac Vice*)

DYKEMA GOSSETT PLLC

39577 Woodward Avenue Suite 300

Bloomfield Hills, MI 48304

(248) 203-0700

jbeidel@dykema.com

mchutkow@dykema.com

tcaprez@dykema.com

ebblackwood@dykema.com

Joanne Zimolzak (19342)

DYKEMA GOSSETT PLLC

1301 K Street NW

Suite 1100 West

Washington, D.C. 20005

(202) 906-8600

jzimolzak@dykema.com

Counsel for Dr. Hoau-Yan Wang

CERTIFICATE OF SERVICE

I hereby certify that on the 21st day of August, 2025, I filed the foregoing MOTION IN LIMINE TO EXCLUDE EXPERT TESTIMONY OF PAUL BROOKES, PH.D. using the Court's CM/ECF system. The CM/ECF system sent a "Notice of Electronic Filing" to all counsel of record who have entered an appearance in this matter.

Dated: August 21, 2025

/s/ Jennifer L. Beidel
Jennifer L. Beidel (*Pro Hac Vice*)
DYKEMA GOSSETT PLLC
39577 Woodward Avenue Suite 300
Bloomfield Hills, MI 48304
(248) 203-0700
jbeidel@dykema.com